

Remarks:

Status of Claims

The claims are unaffected by these preliminary remarks, such that claims 1-26 are pending in the application as originally filed.

Remarks

The present application is a continuation of an earlier-filed parent application. The present application is filed both to pursue prosecution of claims cancelled in the parent application in response to an Office Action dated August 15, 2003, and to introduce additional claims to the subject matter of the present invention.

More specifically, in the Office Action dated August 15, 2003, the Examiner:

rejected claims 1-3, 5, 7, and 8 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,392,296 (hereinafter referred to as "Ahn") in view of U.S. Patent No. 5,926,369 ("Ingraham") together with U.S. Patent No. 6,477,054 ("Hagerup");

indicated that claims 4, 6, 9, and 10 would be allowable if rewritten in independent form; and

allowed claims 11 and 12.

In response, claims 1-3, 5, 7, and 8 were canceled in the parent application without prejudice or disclaimer, and claims 4, 6, 9, and 10 were rewritten in independent form as suggested by the Examiner. Prosecution of the cancelled claims, numbered 1-6 in the present application, is now pursued with the Applicant responding as follows to the Examiner's earlier rejections of these claims.

The Examiner has admitted that no one reference of the cited references discloses all of the claimed features of the present invention. The Examiner is therefore forced to assert obviousness in combining three different references under 35 U.S.C. §103(a) in order to account for all of the claimed features. 35 U.S.C. §103(a) states in relevant part:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Obviousness, it will be appreciated, can be a problematic basis for rejection because the Examiner, in deciding that a feature is obvious, has the benefit of the

Applicant's disclosure as a blueprint and guide, whereas one with ordinary skill in the art would have no such guide, in which light even an exceedingly complex solution may seem easy or obvious. Furthermore, once an obviousness rejection has been made, the Applicant is in the exceedingly difficult position of having to prove a negative proposition (i.e., non-obviousness) in order to overcome the rejection. For these reasons, MPEP §2142 places upon the Examiner the initial burden of establishing a *prima facie* case. This requires initially that a determination be made as to what is "analogous art" for the purpose of analyzing the subject matter at issue. MPEP§2141.01(a). Three additional criteria must also be met in order to establish the requisite *prima facie* case: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine their teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or combination of references) must teach or suggest all the claim limitations. See MPEP §706.02(j), citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991). Furthermore, "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992) (reversing an obviousness rejection where there was no suggestion to modify a prior art mower strip to make it entirely flexible as required by applicant's claims toward a flexible landscape edging strip.); see also *In re Gordon*, 221 USPQ2d 1125, 1127 (Fed. Cir. 1984). Additionally, "if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01.

In meeting this initial burden, the Examiner "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention" *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant's disclosure. See *In re Vaeck*, 20 USPQ 2d 1438, 1442 (Fed. Cir. 1991). Thus, "[m]easuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See e.g., *W. L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 USPQ 303, 313 (Fed. Cir. 1983).

If the Examiner fails to establish the requisite *prima facie* case, the rejection is improper and will be overturned. See *In re Rijckaert*, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). Only if the Examiner's burden is met does the burden shift to the applicant to provide evidence to refute the rejection.

In that light, the Applicant respectfully asserts that the cited references are non-analogous art with regard to the present invention and therefore cannot properly support the Examiner's asserted obviousness rejection under 35 U.S.C. §103(a). The present invention concerns a multi-chip module wherein active and passive components are segregated to opposite sides of a substrate in order to allow for hermetically sealing the active components while allowing continued access to the passive components and thereby facilitating changing ("programming") the passive components as needed following their initial mounting. The problem addressed by the inventors of the present invention involved an inability in the prior art to hermetically seal the active components of a microcircuit for maximized protection while still allowing for accessing and changing at least the passive components thereof to achieve a desired degree of operability and performance.

By contrast, Ahn concerns an improved electronic packaging assembly for increasing the operational bandwidth between different circuit devices without requiring changes in current CMOS processing techniques. While Ahn may disclose one or more but less than all structural elements of the claims to the present invention, it offers no insight into a solution to the problem addressed by the present invention, and, in fact, Ahn discloses that active components in the form of semiconductor chips or integrated circuit devices are located on both of its opposing surfaces. As such, these active components cannot be hermetically sealed beneath a cover while still allowing for accessing the passive components intermingled therewith.

Ingraham concerns a multi-chip carrier which uses less lateral mounting space on the surface of a circuit board or card and that can be formed using flexible circuitized material. Hagerup concerns an LTCC substrate structure having a capacitor and a thermally conductive via. Thus, while Ingraham and Hagerup may also disclose one or more but less than all structural elements of the claims to the present invention, they similarly offer no insight into a solution to the problem addressed by the present invention.

The primary test for determining whether a prior art reference is properly analogous with respect to an invention is as follows:

Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the same field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Clay*, 23 USPQ2d 1058, 1060 (Fed. Cir. 1992).

Furthermore, an invention cannot be considered to be within the field of endeavor of a prior art reference merely because both relate to the same industry. *Id.* 1060. However, “[a] reference is reasonably pertinent if, even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to the inventor’s attention in considering his problem”. *Id.* 1061. Patent examination is necessarily conducted by hindsight, with complete knowledge and benefit of the applicant’s invention as a guide. *In re Oetiker*, 24 USPQ2d 1443,1447 (Fed. Cir. 1992). For this reason, it is necessary to consider the “reality of the circumstances” in deciding in which fields a person of ordinary skill in the art would reasonably be expected to look for the solution to the problem facing the inventor. *Id.* 1447. Ultimately, a rejection based on non-analogous art cannot be sustained. *Id.* 1061.

The test set forth in *In re Clay* was tellingly applied, for example, in *Wang Laboratories, Inc. v. Toshiba Corp.*, which is cited by and discussed in MPEP §2141.01(a) in the context of determining analogousness in the electrical arts. *Wang Laboratories, Inc. v. Toshiba Corp.*, 26 USPQ2d 1767 (Fed. Cir. 1993). Wang Laboratories, Inc. (hereinafter referred to as “Wang”), as assignee, brought suit against a number of parties, including Toshiba Corp. and NEC Corp., for infringement of U.S. Patent Nos. 4,656,605 (hereinafter referred to as the “’605 patent”) and 4,727,513 (hereinafter referred to as the “’513 patent”). *Id.* 1070. These patents relate to and claim certain types of single in-line memory modules (SIMMs) (hereinafter referred to as the “Wang SIMMs”). *Id.* 1770. At trial, a jury found that SIMMs manufactured by Toshiba Corp. and NEC Corp. infringed certain claims of the ‘605 and ‘513 patents. *Id.* 1770. In relevant part, Toshiba Corp. and NEC Corp. moved for JNOV, which was denied, and thereafter appealed. *Id.* 1770.

On appeal, Toshiba Corp. and NEC Corp. argued that the claims at issue were invalid for obviousness under 35 U.S.C. §103 in light of U.S. Patent No. 4,281,392 to Allen-Bradley Co. and its commercial counterpart the X9 SIMM (hereinafter referred to as the “Allen-Bradley SIMM”). *Id.* 1772. Toshiba Corp. and NEC Corp. argued that the Allen-Bradley patent and the Allen-Bradley SIMM were analogous to the claimed subject matter and effective to render the relevant claims of the ‘605 and ‘513 patents invalid. *Id.* 1772.

The court held that an adequate jury instruction regarding analogous art had been provided at trial, and held that the jury’s finding of non-analogous art was supported by substantial evidence. *Id.* 1773. Specifically, the court cited the criteria set forth in *In re Clay*, and noted that “[t]he Allen-Bradley art is not in the same field of endeavor as the claimed subject matter merely because it relates to memories ... [Allen-Bradley] involves memory circuits in which modules of varying sizes may be added or replaced; in contrast, the subject patents teach compact modular memories”. *Id.* 1773.

In finding substantial evidence to support the jury's finding, the court noted that the Wang SIMMs were pertinent to the field of personal computers, and were designed to provide compact computer memory with minimum size, low cost, easy repairability, and easy expandability. *Id.* 1773. Contrastingly, the Allen-Bradley SIMMs were developed for use in a controller of much larger industrial machinery and could not be used in a personal computer. *Id.* 1773. Thus, while the Wang SIMMs were purposefully designed to be small, size was not a consideration for the Allen-Bradley SIMMs. *Id.* 1773. For these reasons, the court held, the Allen-Bradley prior art was non-analogous and not reasonably pertinent to the '605 and '513 patents. *Id.* 1773.

The test set forth in *In re Clay* was also tellingly applied, for example, in *In re Oetiker*, which is cited by and discussed in MPEP §2141.01(a) in the context of determining analogousness in the mechanical arts. *In re Oetiker*, 24 USPQ2d 1443 (Fed. Cir. 1992). In *In re Oetiker*, an improvement was claimed to a stepless, earless metal clamp, with the improvement being a preassembly hook which serves to both maintain a preassembly condition of the clamp and to disengage automatically when the clamp is tightened. *Id.* 1445. All claims were rejected over the combination of U.S. Patent No. 4,492,004 to Oetiker, which disclosed the unimproved clamp, and U.S. Patent No. 3,426,400 to Lauro, which disclosed a plastic hook and eye fastener for use in garments. *Id.* 1445.

Oetiker argued during prosecution that Lauro's garment hook was non-analogous art in that a person of ordinary skill seeking to solve the problem facing Oetiker would not look to the garment art for the solution. *Id.* 1445. The Examiner argued that because garments commonly use hooks for securement, a person faced with the problem of unreliable maintenance of the pre-assembly configuration of an assembly line metal hose clamp would look to the garment industry art. *Id.* 1445. On Appeal, the Board held that Lauro was analogous art because both Lauro's and the Oetiker's inventions relate to "a hooking problem". *Id.* 1445.

The court, however, disagreed, stating that it had not been shown that a person of ordinary skill seeking to solve the problem facing Oetiker would reasonably be expected or motivated to look to fasteners for garments. Furthermore:

The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the

combination. That knowledge cannot come from the applicant's invention itself. *Id.* 1446.

In the present case, applying the criteria of *In re Clay* as interpreted in *Wang Laboratories, Inc.*, and in *In re Oetiker*, none of the three cited references is in the same field of endeavor as the present invention even though all may relate broadly to electronic circuits. Just as all memory problems were not the same in *Wang Laboratories, Inc.*, nor all hooking problems the same in *In re Oetiker*, all electronic circuit problems are not in the same field of endeavor in the present case. The inventors of the present invention, being concerned with their particular issues and problem, cannot reasonably be presumed to have known of or sought inspiration from Ahn, Ingraham, or Hagerup as these prior art references are concerned with entirely different issues and problems and are therefore not reasonably or sufficiently pertinent or related to the endeavor of the present invention,

Thus, as neither Ahn, Ingraham, nor Hagerup are analogous art with regard to the present invention, the Applicant respectfully asserts that the Examiner's obviousness rejections are improper.

The Applicant further respectfully asserts that the modifications proposed by the Examiner do not result in the claimed invention and therefore cannot properly support the Examiner's asserted obviousness rejection under 35 U.S.C. §103(a). More specifically, even if the cited references disclose the claimed structural elements, and even if the cited references are properly analogous art with regard to the present invention, they do not disclose the claimed relationships between the claimed structural elements. Thus, the aforementioned third criteria for establishing the requisite *prima facie* case - that of teaching or suggesting all of the claim limitations - is not satisfied.

The Examiner admits that none of the cited references discloses a cover positioned over and substantially sealing active components, but asserts that such covers are notorious in the art and therefore would have been to obvious to one with ordinary skill in the art. It should be noted, however, that none of the prior art references disclose segregating active components from passive components on opposite sides of a substrate. As mentioned, Ahn, for example, discloses that active components in the form of semiconductor chips or integrated circuit devices are located on *both* of its opposing surfaces. Thus, even if the Examiner's proposed modification to include a cover were obvious, it would not result in sealing the active components while allowing for accessing and changing passive components because both types of components, being intermingled, would be covered and sealed.

Thus, as the Examiner's proposed modifications would not result in the present invention as claimed, and as the cited references do not disclose all of the claim limitations,

the Applicant respectfully asserts that the Examiner has failed to establish the requisite *prima facie* case of obviousness.

The Applicant further respectfully asserts that the Examiner did not consider the invention as a whole as required by MPEP §2141.02, which states: “[i]n the differences between the prior art and the claims, the question under 35 U.S.C. §103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” Though the cited prior art reference, when taken together, disclose a number of the structural elements of the claims, they do not disclose the claimed relationship between those elements, namely, segregation of the sealed active components from the removable passive components.

Even if the cited prior art references can be said to have been properly and validly combined, the question remains as to whether the invention as a whole, which is more than the mere sum of its structural elements, has been properly considered. The mere fact that the various structural elements can be found over a number of disparate references and that a motivation can be rationalized for combining one with another does not make the present invention as a whole obvious because it ignores the claimed relationship between the structural elements. It will be appreciated that most inventions do not involve new and novel structural elements, but rather new and novel combinations of existing structural elements. None of the cited references disclose the particular claimed combinations of the present invention, particularly when evaluated in light of the new and novel relationships between the structural elements that afford substantial advantages over the prior art. If it were sufficient to reject claims by identifying only the claimed structural elements, as the Examiner has done, then any and every claimed invention is potentially easily rejected by merely reducing it to such a degree that its constituent structural elements can be found among some combination of the over six million issued patents.

Thus, as the present invention as a whole has not been considered, the Applicant respectfully asserts that the Examiner’s obviousness rejections are improper.

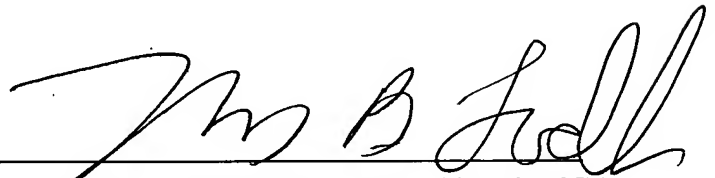
Claims 7-26, which were not present in the parent application, are added in the present continuation application to further emphasize and claim important features of the present invention. More specifically, claims 7, 12, 17, and 22 are independent, and while each eliminates the requirement of a cover, each also introduces the requirement that the substrate be of a low-temperature co-fired ceramic material and further introduces one of the limitations identified as patentable by the Examiner in the parent application. Claim 7 includes the identified-as-patentable limitation that the active components be wire-bonded to the first side of the substrate; claim 12 includes the identified-as-patentable limitation that the passive components be reflow-soldered to the second side of the substrate so as to be removable and replaceable; claim 17 includes the identified-as-patentable limitation

of one or more edge connectors electrically connecting the active components to the passive components; and claim 22 includes the identified-as-patentable limitation of one or more vias electrically connecting the active components to the passive components through the substrate.

As it is believed that all claims currently pending in the application are in condition for allowance, a corresponding Notice of Allowance is respectfully requested.

In the event of any questions, the Examiner is urged to call the undersigned. Any additional fee which might be due in connection with this application should be applied against Deposit Account No. 19-0522.

Respectfully Submitted,
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